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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/963,441	09/27/2001	Jun Kamatani	684.3257	8786

5514 7590 10/17/2003

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EXAMINER

THOMPSON, CAMIE S

ART UNIT	PAPER NUMBER
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1774

DATE MAILED: 10/17/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/963,441

Applicant(s)

KAMATANI ET AL.

Examiner

Camie S Thompson

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-- Th MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) ____ is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

1. Applicant's amendment and accompanying remarks filed September 9, 2003 have been acknowledged.
2. Examiner acknowledges amended claims 1, 3-4 and 7.
3. The rejection of claims 1-10 under 35 U.S.C. 102 (e) as being anticipated by Arai, U.S. Patent Number 6,249,085 is withdrawn due to applicant's argument
4. The rejection of claims 1 and 8-10 under 35 U.S.C. 103(a) as being unpatentable over Yamamoto et al., U.S. Patent Number 5,540,999 is withdrawn due to applicant's argument.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arai, U.S. Patent Number 6,249,085 in view of Yamamoto et al., U.S. Patent Number 5,540,999.

Arai discloses an organic electroluminescence device comprising two opposed electrodes and an electroconductive layer, which is a conduction path for blocking electrons as per instant claim 1 (see abstract). Also, the reference discloses that the organic layer interposed between the two opposing electrodes comprises a conjugated polymer or a mixture of a conjugated polymer or copolymer with other suitable polymers as per instant claim 1 (see column 3, line 17-column 4, line 59). Arai discloses that the conjugated polymer can be a substituted phenylene copolymer wherein the substitution can be an alkoxy or alkylthio group as per instant claim 2 (see column

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10, line 47-column 11, line 46). Additionally, Arai discloses that the Ar group in the formula can be represented by a biphenylene group as per instant claims 3 and 4 (see column 12, lines 16-49). Column 12, lines 16-25 of the reference disclose that the connected ring structure can be represented by a naphthalenediyl or pyridine-diyl as per instant claims 5 and 7. Arai discloses that the conductive layer consists of electron injecting and transporting compounds that may be quinoxaline derivatives as per instant claim 6 (see column 18, lines 22-29). It is disclosed in the reference that the hole injecting and transporting layer, which makes up the conductive layer is in an amorphous state as per instant claim 8 (see column 17, lines 28-29). Column 3, lines 15-55 and Figure 2 of the reference discloses that the device comprises an electron injection layer disposed between two opposing electrodes – hole injecting electrode and electron injecting electrode and the electron injection layer carries negative charge as per instant claims 9 and 10. It is not specifically disclosed in the Arai reference that the organic compounds are mutually structural isomers. Yamamoto discloses an electroluminescent element comprising two opposing electrodes and an electroconductive layer that comprises a mixture of a hole-injecting compound and electron injection compound as per instant claims 1 and 9-10 (see column 3, line 45-column 5, line 5). The mix layer is typically the light-emitting layer as per instant claim 1 (see column 5, lines 6-17). The reference also discloses that the polymers of the mix layer are in an amorphous state as per instant claim 8 (see column 5, lines 49-59). Column 15, lines 56-67 of the reference discloses that the carrier layer is created in the mix layer, which includes the electron injection layer as per instant claims 9 and 10. The Yamamoto reference discloses that the polythiophene structural isomers, formula I and formula II, can be combined in the mix layer as per instant claim 1 (see column 3, line 64-column 4, line 34). Yamamoto discloses in column

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3, lines 61-63 that the use of the polythiophene structural isomers provide an extended life and minimized initial drop of luminance to the EL device. Therefore, it would have been obvious to one of ordinary skill in the art to use mutually structural isomers in the conductive layer of the Arai reference in order to obtain luminous efficiency.

Response to Arguments

7. Applicant's arguments with respect to claims 1-10 have been considered but are moot in view of the new ground(s) of rejection.

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communication from the examiner should be directed to Camie S. Thompson whose telephone number is (703) 305-4488. The examiner can normally be reached on Monday through Friday from 7:30 am to 4:00 pm. If

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attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia H. Kelly, can be reached at (703) 308-0449. The fax phone number for the Group is (703) 872-9306. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0661.

CYNTHIA H. KELLY
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700

A handwritten signature in black ink, appearing to read "Cynthia H. Kelly", written in a cursive style.